PENDING CLAIMS:

The currently pending claims, as originally filed, are provided as follows:

- 1 1. A method of constructing a lookup table of modes for encoding data for transmission 2 in a wireless communication channel from a transmit unit to a receive unit, said method 3 comprising: selecting at least one quality parameter of said data as received by said receive 4 a) unit; 5 determining a first-order statistical parameter of said at least one quality 6 b) 7 parameter; 8 determining a second-order statistical parameter of said at least one quality c) 9 parameter; and 10 d) arranging said modes in said lookup table based on said first-order statistical 11 parameter and based on said second-order statistical parameter. 1 2. The method of claim 1, wherein said first-order statistical parameter and said second-2 order statistical parameter are determined from a simulation of said wireless communication 3 channel.
- The method of claim 1, wherein said first-order statistical parameter and said second order statistical parameter are determined from a field measurement of said wireless
 communication channel.
 - 4. The method of claim 1 further comprising:
 - a) selecting a communication parameter;
 - b) setting a target value of said communication parameter; and
 - c) arranging said modes in said lookup table based on said target value.

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- 1 5. The method of claim 4, wherein said communication parameter is selected from the
- 2 group consisting of bit error rate, packet error rate, data capacity, signal quality, spectral
- 3 efficiency and throughput.
- 1 6. The method of claim 4, wherein said communication parameter is a statistical
- 2 communication parameter.
- 1 7. The method of claim 4, further comprising:
- a) measuring a measured value of said communication parameter in said wireless
- 3 communication channel;
- 4 b) assigning an adjustment to at least one of said first-order statistical parameter and said
- 5 second-order statistical parameter based on a difference between said measured value and
- 6 said target value.
- 1 8. The method of claim 1, wherein said quality parameter is a short-term quality
- 2 parameter.
- 1 9. The method of claim 8, wherein said second-order statistical parameter comprises a
- 2 variance of said short-term quality parameter.
- 1 10. The method of claim 9, wherein said variance is selected from the group consisting of
- 2 temporal variance and frequency variance.
- 1 11. The method of claim 8, wherein said short-term quality parameter is selected from the
- 2 group consisting of signal-to-interference and noise ratio, signal-to-noise ratio and power
- 3 level.

- 1 12. The method of claim 1, wherein said first-order statistical parameter comprises a mean
- 2 of said at least one quality parameter.
- 1 13. The method of claim 1, wherein said second-order statistical parameter comprises a
- 2 variance of said at least one quality parameter.
- 1 14. The method of claim 13, wherein said data is transmitted at more than one frequency
- and said variance is a frequency variance.
- 1 15. The method of claim 13, wherein said data is transmitted in a multi-carrier scheme and
- 2 said variance is a frequency variance.
- 1 16. The method of claim 13, wherein said variance is a temporal variance.

1 17. Please cancel claim 17.

- 1 18. A storage medium tangibly embodying a lookup table of modes for encoding data for
- 2 transmission in a wireless communication channel from a transmit unit to a receive unit, said
- 3 storage medium comprising instructions for:
- 4 a) selecting at least one quality parameter of said data as received by said receive
- 5 unit;
- 6 b) determining a first-order statistical parameter of said at least one quality
- 7 parameter;
- 8 c) determining a second-order statistical parameter of said at least one quality
- 9 parameter; and
- d) arranging said modes in said lookup table based on said first-order statistical
- parameter and based on said second-order statistical parameter.